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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/807,262	10/11/2001	Lee Eisinger	0553.0012	4308

26781 7590 11/09/2004

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EXAMINER

SAGAR, KRIPA

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 11/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/807,262	EISINGER, LEE	
	Examiner	Art Unit	
	Kripa Sagar	1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7 and 8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Receipt is acknowledged of a request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e) and a submission, filed on 5/10/04. The submission, however, is not fully responsive to the prior Office action because the amendment is not in compliance with 37CFR1.121.

Specifically the absence of a status for claim 6 in the amended claims filed on 10/30/03 was brought to Applicant's attention in the last office action dated 12/18/03. The advisory action also noted that the claims as proposed to be amended were not in a condition for allowance and presented arguments for the same.

2. The RCE is non-compliant in claim format. No substantial amendment to the claims has been presented in the RCE. No new arguments have been forwarded in support of the claims.

Response to Amendment

3. The amendment filed 10/30/03 is not entered as being non-compliant with 37CFR1.121.

Claims 1-5,7,8 are under consideration.

Claim Rejections - 35 USC § 103

4. For the above reasons the rejection of claims presented in the office action of 6/27/03 is maintained. This is reproduced below.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-5,7,8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat.5397683 to Roland in view of US Pat 4929402 to Hull The invention is directed to a method of texturing or patterning the surface of a prototype.

The claims recite the photolithographic steps to form textured or relief images on a surface, repeated cycles of lithographic patterning and patterning the surface of a prototype model.

Roland teaches all of the limitations in claim 1. These include providing a substrate (34) with a photoresist layer (32) as shown in Fig.2. Providing a pattern mask (30) with an image that is to be formed in relief on the substrate. The resist is exposed and developed to form the image in relief shown in Fig.7. The process uses a photo-emulsion layer to overcoat the resist (cl.2) and re-exposes the second layer. The layers are dried (cl.3) after each application (Fig.1). Roland teaches that the entire process may be repeated after forming the image (cl. 5). Roland does not specifically teach cleaning the surface of the object before applying the resist (cl.4). Roland teaches feathering the edges of the features with an overcoat of resist (cl.8). Surface preparation prior to coating is conventional, well known in the art and includes pre-cleaning. This step is necessary to promote adhesion of the resist to the surface by removing any inhibiting films and further to remove particles adhering to the surface which would compromise the integrity of the pattern formed.

Roland does not teach forming the pattern on a prototype model formed by (SLG) stereolithography, or forming a prototype model with raised images (cl.7).

Stereolithography is a well-known art. Hull teaches rapid prototyping using SLG (1;36-46). The 3-dimensional object may be formed sequentially (layer-by-layer) by exposing a sheet of photosensitive liquid polymer to an image forming radiation (2;21-29). The layers are integrated (see Fig.1) to build up the final model (3; 14-16). Additional images can be formed on the side of the model (Fig.8; 10;48-68).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use models formed by stereolithography as taught by Hull and to form the raised relief images on the models as taught by Roland to successfully design prototype models; because Hull teaches that the technique is flexible, versatile and reduces design cycle time and costs (11;28-64).

1. Claims 1-5,7,8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat.4914004 to Kohler in view of US Pat 4929402 to Hull and further in view of Roland.

Kohler's invention is directed towards forming relief images on surfaces and on 3-dimensional objects by a photolithographic process. The steps include coating a surface with a photoresist, irradiation through a mask and removing the areas not photo-polymerized to provide relief images. Three-dimensional objects may be coated and patterned (5;10-59).

Kohler does not teach using a stereo-lithographic model or softening the edges of features by overcoating with resist.

Stereolithography (SLG) is a well-known art. Hull teaches rapid prototyping using SLG (1;36-46). The 3-dimensional object may be formed sequentially (layer-by-layer)

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by exposing a sheet of photosensitive liquid polymer to an image forming radiation (2;21-29). The layers are cured between applications. The layers are integrated (see Fig.1) to build up the final model (3; 14-16). Additional images can be formed on the side of the model (Fig.8; 10;48-68).

Hull does not teach softening the edges of features by overcoating with resist.

This is a conventional practice as shown by Roland in fig.8. Roland's features are targeted towards tactile signs for the visually handicapped and require a smooth ("egg shell") finish.

Surface preparation prior to coating is conventional, well known in the art and includes pre-cleaning. This step is necessary to promote adhesion of the resist to the surface by removing any inhibiting films and further to remove particles adhering to the surface which would compromise the integrity of the pattern formed.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use models formed by stereolithography as taught by Hull and to form the raised relief images on the models as taught by Kohler to successfully design prototype models; because Hull teaches that the technique is flexible, versatile and reduces design cycle time and costs (11;28-64). One of ordinary skill in the art would have been motivated to soften the edges of features as taught by Roland because it is a conventional and proven method of improving the finish of the features for tactile design.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kripa Sagar whose telephone number is 571-272-1392. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark F Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MH/ks

A handwritten signature in black ink, appearing to read 'Mark F. Huff', with a long horizontal flourish extending to the right.

MARK F. HUFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700